An Essay

on

Compression of the Brain

Respectfully submitted to the Faculty of

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by

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In choosing a Surgical Subject, it is proposed to prefacr this Thesis with a few remarks upon Homœopathic Surgical Practice. In the progress of medical Scincr, no branch has attained to higher eminencr than that of Surgery: And we as Homœopathic Practitionrrs can look with great advantagr to the discoverirs and improvements madr by the old School in this direction, and thesr together with our knowledgr of the law of Similr, will enablr us to treat our Surgical cassr with as much morr superiority and certainty over our old School Brethren, as it is acknowledgrd we can the purely medical cassr which present themselvrs.
With regard to the practicr of Surgery by the upholdrs of our law, thrrr are two

popular opinions, widely different though almost equally incorrect. First. That the practice of Surgery by our School differs in no respect from that practiced by our opponents. and Secondly. That we never use a knife or have recourse to any mechanical appliances: or in other words, to be strictly Homœopathic, dislocations should be reduced, fractures set and Amputations performed with the infinitesimal doses.

The former of these we have already stated to be at least inaccurate: there is no doubt but that as to the mere performing of any operation we should follow in the footsteps of our Elders, but this is the least part of Surgery; it is in the measures taken to prevent the necessity of operating and in the treatment of the patient after an operation, that the great difference exists

between the Surgery of the New School or Homœopathy and that of the dogmatical School or Allœopathy. However ridiculous the latter of the opinions stated may appear, there are many persons who think that in such a course of treatment the practice of Homœopathy consists. It is true to a certain extent that Homœopathy has shown, that many diseases formerly thought to be incurable without the knife, can not only be cured, but cured more effectually and permanently by the exhibition of remedies in accordance with the great law, "Similia similibus curantur." And it is by the application of the same law in the treatment of patients after surgical injuries and operations that we can show the same vastly superior results. The inflammation which is liable to be set up in such cases can be combatted

with Acnite, Bella., Arnica &c, &c. much more effectually than it can be subdued by the old school with their bloodletting, Nauseating drugs and Cathartics.

But we now proceed to the consideration of our subject, Compression of the Brain in its Surgical aspect. It is generally known what is meant by Compression of the Brain and yet as has been said by many Excellent Surgeons it is exceedingly difficult to give an exact definition. In fact it has been questioned by many whether there can be compression of the Encephalon, that is Compression in the sense of diminution for it is usually understood when it is said that anything is compressed that its bulk is diminished. Dissection has given much proof that the substance of the brain cannot be diminished in bulk, its pulpy structure will not

admit of it. Dr. Gross, of this city, says that he cannot conceive such to take place unless a portion of the brain substance is taken and submitted to an amount of artificial pressure very different from what exists in the worst comminuted fracture of the cranium.

But the pulpy substance of the brain may be forced to alter its normal outline or rather change its proper shape, and, even its position in the cranium. One portion may be depressed while another expands, the convolutions may be pressed out and the ventricles encroached upon or even obliterated; yet the bulk of the brain itself may not be diminished in the slightest degree. Careful post-mortem examinations have shown such to be the condition of things in all these cases: so it is from like circumstances that the serious and dangerous symptoms of compression

are derived. This state of the brain may be produced from various causes, but Surgically considered they are found arranged by Modern Authors under four heads.

First: Compression from extravasation of blood.
Second: Compression from depression of bone.
Third: Compression from the presence of foreign bodies.
Fourth: Compression from the Effusion of pus.

It is well understood that injuries to the head are not serious on account of the lesion to the scalp, but on account of that done to the contents of the Cranial Cavity, the Brain and its Membranes. The Causes of these injuries may be either direct or indirect, and it is scarcely possible to have any lesion of the External Structure without involving the internal, owing to the close Connection between them. In some cases there is but a slight Concussion, in others a dangerous Com-

pression of the Encephalon, according to the violence of the injury and the point of the cranium upon which it is received. These facts were particularly brought before the profession by Mr. Pott, an eminent English Surgeon but are looked upon as matters of course at the present time.

The symptoms of compression from whatever cause are always of the same character, and should be easily recognised, but the time of their appearance is greatly influenced by the exciting cause. If they are induced by the extravasation of blood they appear in a short time after the infliction of the injury: if from depression of bone or the presence of a foreign body they generally come on immediately: but if from the Effusion of pus, three or four days frequently elapse, before the symptoms appear for the reason that the parts have to pass

through the stages of inflammation precursory to that of Suppuration.

The Symptoms of Compression are.

Entire loss of sensibility and motion; special sensation is destroyed; the Eyeballs are turned up, glassy and fixed; the pupils dilated, cases are reported by Dr. Hennen where one pupil has been contracted the other dilated; Contraction of the pupil is very rare in compression and they are always insensible to light.

The countenance is pale; breathing slow, laboured and stertorous, with a peculiar puffing sound during expiration; the bowels are inactive, and the bladder incapable of expelling its contents, which should be drawn off with a catheter; the pulse is soft, slow and irregular: there is hemiplegia or paralysis of the side opposite the seat of injury, this has been accounted for by the decuss-

ation of nerve fibres at the base of the brain, whether this Explanation be true or not a knowledge of the fact enables us to diagnose upon which side of the brain the Abnormal condition exists. The characteristic symptoms or distinguishing marks of Compression of the brain have now been Enumerated and if always exhibited uncomplicated, no disease or pathological Condition would be more easily diagnosed. But they are very often and almost necessarily found complicated with Concussion, for an injury which is sufficient to produce Compression in any of its forms, but particularly that from extravasation, may also occasion among its first Effects all the prominent symptoms of Concussion. It is in this way that a case of Compression may in its Earlier stages easily be mistaken for one of Concussion although the train of symp-

toms belonging to each is entirely different: one being a state of Coma the other of Syncopi. Let us now look at some of the distinguishing symptoms belonging to Concussion.

First. In Concussion the symptoms immediately follow the injury; the patient answers, when spoken to in a loud tone of voice; when pinched he will draw the part away, showing that there is no paralysis. In Concussion there is nausea and vomiting, whereas in Compression the stomach is undisturbed and insensible even to the action of Emetics. The pulse is feeble intermittent and frequent; the bowels and bladder are relaxed. From which it appears that the train of symptoms belonging to Concussion although so often confounded with those of Compression are of an almost opposite character; and if they were always distinct and uncomplicated it would be

difficult if not impossible to mistake the one for the other.

It is purposed, first to consider Compression from extravasation of blood.

A blow received on the head although frequently insufficient to produce a fracture of the cranium, with or without depression of bone, will often rupture some of the vessels either of the brain or its membranes, and so occasion extravasation of the fluid which circulates through them. Effusion may also take place where there has been no external violence to the head as in apoplexy which may often be mistaken for Compression and vice versa, simply from want of knowledge as to the history of the case. In Compression from the effusion of blood, the fluid may lie in different localities and between different surfaces; between the skull and dura mater; the dura mater

and the pia mater or between the substance and in the cavities of the brain itself. The first species is the most common and the most important; for it alone admits of surgical interference. The effusion in this situation has been observed to be more circumscribed; it may take place at any part of the cranium, but when it occurs at its base is most generally fatal. In the other forms surgical means are useless, and if the quantity of effused fluid be large the case will generally be destructive in its termination, but if small the patient may recover under judicious Medical treatment.

It is in cases from extravasation of fluid that there is at the first effect of the injury all the symptoms of concussion, for the violence which produces rupture of the vessel, usually stuns the patient: and it is often not until reaction is established that the ruptured vessels bleed

freely. The patient may even get up and attend to his business, but in a short time from fifteen to twenty minutes he becomes deadly pale, reels, falls down and when examined there is detected all the symptoms of Compression. Sometimes however the vessel bleeds freely during the state of syncope, then the symptoms of Compression closely follow or are intermingled with those of Concussion. The "interval of ease" as it has been called, or the interval between the symptoms of Concussion and those of Compression is of the greatest importance in pointing out the nature of the case: for there is no certain rule whereby to distinguish what the pressure is caused by or where it is situated. If there is a fracture through the tables of the skull particularly if it be accompanied by depression, it can generally be detected by passing the finger over the seat of injury: but the inner table alone may be

fractured and depressed, this of course cannot be ascertained in this way. The best guide then in endeavouring to make out a correct diagnosis, seems to be the length of time which elapses between the infliction of the injury and the appearance of the symptoms. The exact locality where the pressure from effusion takes place is difficult to determine, the most likely place is that under the seat of injury or else on the other side of the cranium directly opposite.

The propriety of trephining in compression from extravasation has been questioned by very eminent Surgeons. It is certain that the operation of trephining is much less frequently performed now than formerly; in old times it was thought better to apply the trephine many times, rather than allow a single Extravasation to remain undetected. But in later times the French Surgeon Desault and the English Surgeons Abernethy and

Pott taught that the trephine should never be applied when the point of Effusion is unknown: Pott says "that the only chance of relief (when the precise location of the Effused fluid is unknown) is from phlebotomy and an open belly, by which we hope so to lessen the Quantity of the circulating fluids as to assist nature in the dissipation or absorbtion of what has been Extravasated".
Finally to come down to the present times the operation of trephining under the aforementioned circumstances is less frequently performed, it seems to be the opinion of the Surgeons of the present day, taking all the uncertainties already recounted together with the liability of Continued and irrepressible hemorrhage, that the operation should rarely if ever be attempted for the relief of symptoms produced by Effusion of fluid. In confirmation of this, Dr. Gross reports the following case "From a boy ten years old, having a severe wound of

the scalp, after trephining I extracted a large coagulum, no relief followed; and as fast as I removed the blood the cavity was refilled: So that I was finally compelled to close the wound with a compress and tight roller, for if I had not done this he would have speedily bled to death as it was he died unrelieved in forty Eight hours" The same Author also says with regard to trephining in case of Extravasation, "My opinion is that little advantage is to be gained from such an undertaking and that it would be well in view of its hazards to refrain from it altogether."

However much the old school have improved in their surgical treatment it is a lamentable fact that in their medical treatment they progress very slowly. We find the same treatment laid down by authors of the present day as that prescribed by Pott. The Moderns having

the advantage only in a more improved phraseology. As has been before mentioned it is in the Medical treatment of such injuries that the vast superiority of Homœopathy manifests itself: a general outline of which will be given after adverting to the other forms of Compression.

Secondly. Compression from depression of bone. Depression of the bones of the Cranium may or may not be attended with symptoms of Compression. If depression takes place the symptoms come on immediately after the infliction of the injury: depression may take places in simple, comminuted or compound fractures of the Skull, although in some cases of each there are no marked symptoms of Compression. According to the violence of the blow the injury becomes complicated and there is necessarily in the same ratio an increase

or diminution in the severity of the symptoms.
The Surgical treatment of Compression from depression of bone is as much if not more an object of dispute among Eminent Surgeons as that from Effusion of fluid. Some contending that the trephine should be used in all cases of fracture even when not attended by symptoms of Compression, while others assert that it is only in the worst forms of depression that the hazard of an operation should be undertaken. They also differ as to the time most proper for its performance, some advising that it be performed immediately, if at all; others, that there should always be an effort made to relieve the symptoms by antiphlogistics and depletion; should these not prove efficient then as a last resource the trephine should be used.
By reviewing the works upon this subject, it

will be found that the use of the trephine for compression from depression of bone, as for compression from Extravasation is much less frequently recommended than formerly.
No author on the subject up to the present time seems to be prepared to draw a line on the one side of which the trephine should be used and on the other it should not: in this as in all such matters, Experience the best guide must alone instruct us. However a few general rules are pointed out. Practitioners mostly agree that where Compression is produced by depressed bone in a compound fracture of the Cranium, the trephine should be immediately used. But in cases of simple fracture there is no fixed rule and the Surgeon can only be governed by the amount of depression and the severity of the symptoms in Each individual case. When in a Comminuted

fracture there is considerable depression, the
Edges of the bone rough and spiculated
there is little doubt among Surgeons as
to the propriety of the operation
The object of trephining in such cases is to
Elevate that portion of bone which is depressed
and to remove the spicula and small pieces
of bone which are entirely detached as well
as the clot and serum if there has been
extravasation, which as has been observed so
often accompanies depression.
The symptoms of Compression are the same in
all cases with out regard to the cause and
only differ in severity, When caused by
depression, as has been said, they generally
appear immediately after the infliction of
the injury, although this is not always
the case, particularly where the depression
is but slight, such cases greatly resemble

those occasioned by Extravasation, and when the inner table of the skull is alone depressed it is almost impossible for the Surgeon to determine which form of Compression he has to treat.
There is likewise Compression from the presence of foreign bodies. In these cases there is considerable depression of bone which together with the presence of a foreign substance produces all the ordinary symptoms of Compression. This form of injury is often instantly fatal, and is generally produced by musket balls penetrating the Calvaria; if however the Surgeon be called to see a patient under such circumstances, his first object should be to discover where the foreign body was lodged and if possible to Extract it through the wound made by its Entrance; but if this cannot be done immediate recourse should be had to the Trephine, which should be applied as nearly

over the foreign substance as circumstances will permit.

Notwithstanding what has been said with regard to the general fatality of such injuries the records of Surgery furnish numerous instances of patients living a considerable time with foreign bodies within the cavity of the cranium. Baron Larrey relates quite a number of cases which he himself treated. Paroisse mentions one where the patient soon recovered his senses after the injury and the ball remained within the cavity of the cranium in the the course of a few months he experienced no inconvenience, except a difficulty in opening his mouth. Another case is related where a soldier lived four months. The postmortem held in the case revealing the ball lodged in the medullary substance of the left hemisphere just above the ventricle.

Lastly there is Compression from the Effusion of pus. This may be occasioned by less violence than Either of the other forms of Compression. A blow upon the head from which the patient feels but slightly stunned may be sufficient. It may also be produced indirectly: falls, no matter upon what part of the body, jumping from heights or any shock which will occasion a shaking or Concussion of the brain, will sometimes detach the pericranium or dura mater and set up inflammation which may terminate in suppuration. In this form of Compression more time Elapses between the infliction of the injury and the appearance of the symptoms, than in Compression from any other cause. For reasons which have already been given.
Three or four days and even in some cases as many weeks will pass before the symptoms of Compression show themselves, and preceding

these there are the symptoms which usually accompany the formation of pus in any part of the organism, such as loss of appetite, flushed cheeks, hot and dry skin, rigors &c. &c.
So there can be but little difficulty in distinguishing this from the other forms of Compression its steady though slow progress from one stage to another can leave no room for doubt respecting the true nature of the lesion.

Pus may be effused in the same localities as blood is Extravasated, but it mostly takes place between the dura mater and the skull or in the anterior or middle lobes of the brain. The former of these is indicated by the formation of a small puffy tumor over the seat of injury and is generally occasioned by direct violence such as a blow upon the Cranium. Whereas the latter or Suppuration within the Substance of the brain itself is mostly produced by indirect

violence or direct violence of great severity. For determining upon which side of the brain such a lesion Exists, we are obliged to depend upon the same indications as in Compression from Extravasated blood; namely the hemiplegic condition of the patient, always referring the lesion of the brain to the opposite side to which we find the paralysis. As to the use of the trephine in this form of Compression there is little to be said. When there is reason to believe that the pus is located between the Skull and the dura mater and its position is fully determined the Surgeon should not hesitate to apply the trephine if the symptoms of Compression are severe. And when there is satisfactory Evidence of a deep seated abscess in the substance of the brain, it has been recomended to make a free incision through the Cerebral tissues, to allow the pent up fluid to Escape; and some few cases are reported

in which such a course of treatment has been followed by happy results. However the prognosis in most cases of Compression from Effused pus is unfavourable.

It is in the medical Treatment of Compression of the Brain as well as of other Surgical diseases, that Homœopathy differs fr Allopathy and manifests its great superiority. By the application of Arnica externally together with its administration in alternation with Aconite and Bella. internally most beneficial results are obtained. Arnica should be Exhibited immediately and if symptoms present themselves, that call for other medicines they should be Exhibited as just directed. Aconite is a most important agent to keep down inflammatory symptoms. Belladonna, should be given where is great congestion of the brain. Coffea has been recommended as an Excellent palliative.

Opium, where there is great stupor, Stertorous

breathing, bloated face, &c, &c... Veratrum is indicated where there is coldness of the Extremities or Even of the whole body, disfigured Countenance and slow breathing.

These are the prominent indications of the remedies most constantly Employed, there are however many more which may be used with benefit in these cases. Such as Hyos. Stram. Plumb. and the like, which act Especially upon the brain and nervous System. These the Surgeon should refer to, in Each complicated case of the Kind which he may be called to treat.
